Management
Progress through partnership

Experiential learning opportunities for undergraduate pharmacy students in community pharmacies in the United Kingdom

Amardeep Singh, Pharmacist Independent Prescriber and PhD Candidate; Dr Hana Morrissey, Reader in Clinical Pharmacy; Professor Patrick Ball, Professor of Pharmacy Practice: School of Pharmacy, Faculty of Science and Engineering, University of Wolverhampton, United Kingdom.
Correspondence to: hana.morrissey@wlv.ac.uk


Amardeep Singh


Hana Morrissey


Patrick BallPatrick Ball

Abstract

Title
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Author List
Singh A, Morrisey H, Ball P.

Summary
Pharmacists in the UK are a resource at many levels of patient care, regularly providing expert clinical advice with and without appointment or signposting to appropriate help or support. The NHS is under increasing pressure to deliver services and pharmacists play an increasing role in helping people understand how to use their medication, along with providing healthy living advice.

The recent development of pharmacists employed in general practice has broadened possible career pathways. Preparing pharmacy graduates to develop smoothly into these roles requires pharmacy education to adapt and evolve. One possible innovation is the introduction of experiential learning modules in the curriculum, similar to that provided to other healthcare professionals such as doctors, nurses, physician associates, etc. Workplace-based learning would align the attainment of professional competencies during the undergraduate course to reflect the future role.

The paper examines the inclination of community sector pharmacists to provide experiential learning through a survey of stakeholders and pharmacists. It was found that pharmacists value workplace experiential learning opportunities and liked the concept of students arriving trained and validated in certain services prior to placement. Placement students would have the opportunity to contribute something back to their placement site. The survey underpins the need to examine current gaps of pharmacy education curriculum, why the change is required, and the models that could possibly be used to deliver that change.

Keywords: GPCP, inhaler, adherence, monitoring, coding, holistic, self-management.

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- Conceptualisation, methodology, validation of the analysis, investigation: Amardeep Singh, Hana Morrissey, Patrick Ball
- Writing - original draft preparation: Amardeep Singh
- Writing - review and editing: Hana Morrissey, Patrick Ball
- Supervision: Hana Morrissey, Patrick Ball
- Project Administration: Hana Morrissey.

Introduction

Pharmacy practice has evolved and continues to do so. The only constant is change but, as practice changes, education and training must at least keep pace, or better still attempt to anticipate some of the directions of change and position the profession. We have evolved from 'chemists and druggists' to pharmacists and we are increasingly being asked to take on further patient-facing roles. An historical perspective can inform our perception of the evolution in the profession and how it has adapted to changing societal needs.[1]

From Asclepius until the 18th century, the exclusive entry to the pharmacy profession was as an apprentice apothecary where the aspiring pharmacist or aspiring apothecary, would work side-by-side with the established practitioner, learning the skills of compounding and extracting of drugs by shadowing and practising medication-related activities under supervision. This may be the origin of a recent proposal that training could return to an apprenticeship model, but this is unlikely to be accepted by the profession. In the UK until middle of the 18th century anyone could earn the title 'chemist and druggist'. It was this lack of regulation that, eventually, led to the establishment of the Pharmaceutical Society as a professional body.[2]

Despite the profession's extensive and growing patient-facing role, pharmacy training in the UK is still classified as a science degree and therefore attracts no funding for experiential clinical

The pharmacist of the future will have a greater clinical role within the multidisciplinary healthcare team.

placement. The undergraduate pharmacy curriculum has a strong science base, which is unique amongst the frontline health professions, and this is considered by many to be essential to retain. In this context, adding in the required clinical modules and experiential placements without funding support poses a challenge.[3,4]

Pharmacy education in the UK and globally

Globally, the pharmacy education curriculum is based upon pillars of professionalism, clinical knowledge, pharmaceutical chemistry and their practical application. As the profession adapts to the changing needs and requirements of society, so ideally the training program should also adapt to prepare the entrants to our profession for the roles they will be expected to fulfil. Globally, pharmacy schools follow a curriculum that includes a foundation of pharmacy science, pharmacokinetics, pharmacology, medicinal chemistry, and pharmacotherapy in addition to medication safety, pharmacy law and ethics, biostatistics, toxicology, epidemiology, hands-on skill-based practical classes, evidence-based practice, innovation and business management. While all schools aim to meet the same outcomes and educational goals and objectives, the way in which they do so varies considerably across the countries and is linked to specific local needs and availability of resources. In the US, Canada and Australia, for example, most schools emphasise more clinical coursework in later years of course.[3] In Europe, institutions follow the Quality Assurance in European Pharmacy Education and Training (PHAR-QA) consortium, which is a complex curriculum of competency attainment.[5]

Disparity in the design of UK undergraduate pharmacy courses

In comparison to other European pharmacy programs, the UK programs stand out in that they provide the underlying scientific and theoretical knowledge alongside experimental and clinical expertise. Therefore, at the end of the 4-year program, the graduate is expected to be fully equipped to enter the clinical/practice environment. This contrasts with other European programs where the university component of the education concentrates purely on the scientific aspects before the students graduate and enter the pharmacy practice training arena leading to 6 years total training. Examining the UK expectations of uniform and advanced healthcare provision to all patients, it appears that the pharmacist of the future has a greater clinical role within the multidisciplinary team of doctors, nurses and other health care professionals.

Medical education has long incorporated extensive integration of workplace experience alongside learning modules. Workplace learning plays a crucial role in the development of learners' attitudes, behaviours and skills as they are socialised into the profession.[6] A number of factors contribute to this form of learning and development including supervision, feedback, the work

environment and culture and, perhaps most importantly, exposure to patients. Patient contact within a multidisciplinary team early in training can serve to develop the communication skills and empathy necessary in frontline healthcare professionals.[7]

Whilst maintaining its strong science foundation, pharmacy is an increasingly clinical, patient-focussed profession, yet education and training has traditionally been very different from medical education, and pharmacy students mostly graduate lacking first-hand experience in one-on-one patient communication and in delivery of professional services.[8] The GPhC is currently considering changing the pharmacy degree to incorporate the pre-registration component within the undergraduate training allowing workplace integration to equip students with necessary skills for the changing role of the pharmacist within the healthcare platform. A similar approach was tested and evaluated in Scotland; however, this did not include students from all years of education nor the training and certification on patient life-style modification advice.[9]

Is change required?

United Kingdom government reports have described multiple challenges in health care, including the increasing prevalence of non-communicable diseases, sub-optimal treatment outcomes and spiralling costs.[10] To address the challenges, the reports call for a changed model of healthcare, focussed on promoting healthy lifestyles and team-based delivery of health care including professionals from different disciplines where pharmacists share responsibility with other team members for patients' health outcomes. These principles have been incorporated into accreditation standards for the MPharm degree. The underpinning philosophy is that the best way to train pharmacists to accept responsibility for patients' health outcomes is to include supervised workplace-based patient care experiences into the MPharm curriculum from the first-year with steadily increasing patient care responsibilities.[11] The time devoted to workplace-based learning would increase throughout the remainder of the MPharm programme. Academic and practice-based educators have the responsibility of ensuring that MPharm graduates have gained the skill-sets called for in the accreditation standards and the published government reports.[12] The Scotland National Pharmacy Bboard has adopted experiential learning and embraced the concept of task performance on placement place rather than just observing.[13]

Challenges caused by the current model

There are no formal requirements for experiential education or clinical placements within the UK MPharm program, but it has become an expectation.[12] The placements are not funded as for medical and other health professional students, so most universities offer just one week of experiential learning in community pharmacy for each year with most clinical education focused on classroom simulation and role play with teacher practitioners. This is a long way far from real practice, which can only be best delivered when students are placed in clinical environments.[14] The short duration of experiential rotations is the major criticism of the current curriculum; an observational placement at a single site without any rotations leaves students with an unimaginable gap of clinical practice experience. Additionally, the lack of national guidelines means students have minimal opportunities to assume any clinical responsibility or accountability for patient care. With this high degree of dependency on preceptors, many employers view taking on experiential students as a burden, rather than as contributing members of the health care team.[15]

Assessment within UK pharmacy schools relies predominantly on performance in written, theory examinations. Invariably there is also a contribution from coursework exercises requiring the writing of reports and interpretation of data. The research project falls within this latter category and usually contributes approximately 15%-20% to the final award but universities have been moving away from this practice because of plagiarism. Increasing use is being made of competency-based assessments with pass/fail criteria including history taking, vital investigations, observations of signs and symptoms, graded by means of objective structured clinical examination. This again involves classroom role plays and emphasis on the satisfactory grades for moving to the next level. Patient involvement is zero.[14]

The GPhC highlighted the 'integration ladder' developed by the medical curriculum and assessment expert Professor Ronald Harden.[16] The three models of integration that meet the expectations of future pharmacists are

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'trans-disciplinary', 'inter-disciplinary' and 'multi-disciplinary'. Another approach could be a six-step approach:[17]

- Identify the students' knowledge or skill gap or new knowledge and skill required.
- Assess students' general needs and learning in the identified topic.
- Target assess to the competencies where learning is a lifelong, professional requirement.
- Set clear learning aim and objectives.
- Establish clear educational strategies and framework.
- Implement the learning experience, monitor its performance and evaluate its outcomes.

How could the new pharmacy education model be delivered?

Careful consideration of the above led to the design of a survey to be delivered through SurveyMonkey to gauge the effect of 'workplace-based training', 'small group discussion'and 'reflective writing' in enhancing student learning in the MPharm at the University of Wolverhampton. Employers in the community pharmacy sector were asked to respond to ten questions based on workplace-based learning for 1st, 2nd and 3rd year students studying the MPharm degree course.

Results and discussion

In the survey, six questions were based on 'agree' or 'disagree' responses to questions (Table 1). Out of 54 responses, In the survey, six questions were based on 'agree' or 'disagree' responses to questions (Table 1). Out of 54 responses, 42.59% (median) community pharmacists selected 'strongly agree' or 'agree' to all six questions and 7.41% (median) of respondents selected 'disagree' or 'strongly disagree'. This suggests that employers appreciate the importance of experiential learning for pharmacy undergraduates in a similar way as the early training of dispensers, healthcare assistants and technicians but this learning should be considered as reflection on concepts from a taught course and not as the only means to train pharmacists. selected 'strongly agree' or 'agree' to all six questions and 7.41% (median) of respondents selected 'disagree' or 'strongly disagree'. This suggests that employers appreciate the importance of experiential learning for pharmacy undergraduates in a similar way as the early training of dispensers, healthcare assistants and technicians but this learning should be considered as reflection on concepts from a taught course and not as the only means to train pharmacists.

With a response of 87% of employers willing to take students (Figure 1) and with 73.5% who would like to see some government funding (Figure 2), it appears there will not be a shortage of places if payments were offered by a new training scheme. However, a paradigm shift is required to change the culture of placement being a burden to an additional of free labour performed by students trained in the university settings in certain activities and deemed to be competent in performing them before placement. They are still students and would require oversight by their mentor during the initial real life application, but they could deliver certain tasks unsupported and gain a valuable patient-facing experience.

Task considered appropriate for the student in community pharmacy placements

When pharmacists were asked what jobs the students could do, they selected

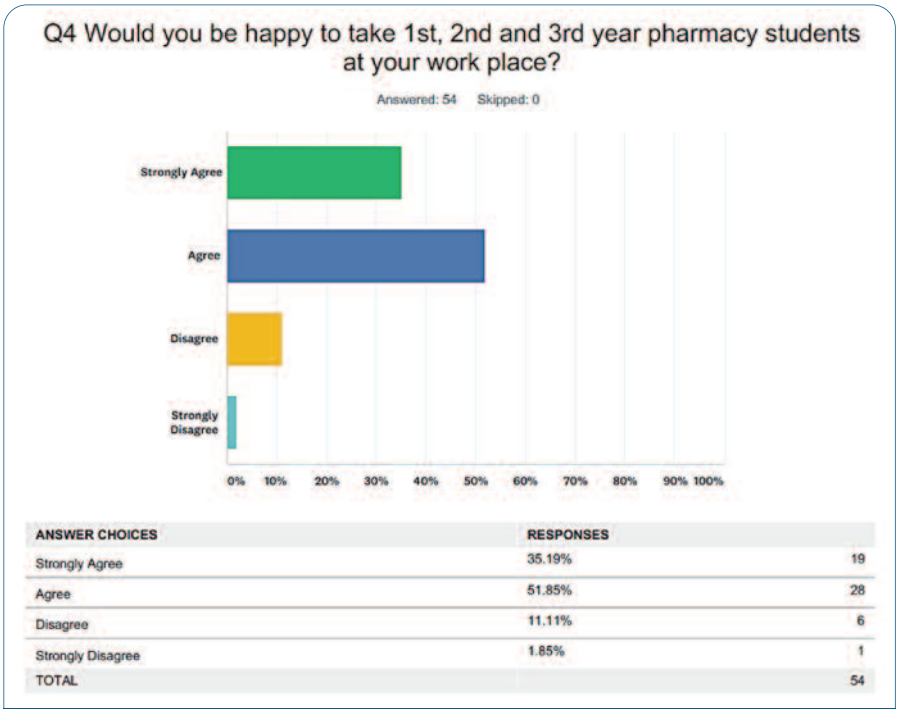
Table 1: Questions required Yes/No answers

Question	Strongly agree	Agree	Disagree	Strongly disagree
Would you support the initiative of developing a work-based learning for Pharmacy undergraduate students through placement in community pharmacy sector?	64.81%	24.07%	7.41%	3.70%
Do you think that one-year pharmacy pre-registration placement is enough to achieve required competence knowledge for pharmacist role?	18.52%	44.44%	33.33%	3.70%
Do you think that one week of placement of undergraduate pharmacy student in community pharmacy will be beneficial to both employer and students?	22.22%	42.59%	31.48%	3.70%
Would you be happy to take 1st, 2nd and 3rd year pharmacy students at your workplace?	35.19%	51.85%	11.11%	1.85%
If students are trained to provide a certified service at your pharmacy, would you have confidence to allow them to provide that service?	22.22%	59.26%	14.81%	3.705%

those activities which clearly consume the most of community pharmacy workload. Shelf filling, stock management, prescription reception and fridge temperature reading accounted for over 80%of responses (Table 2).

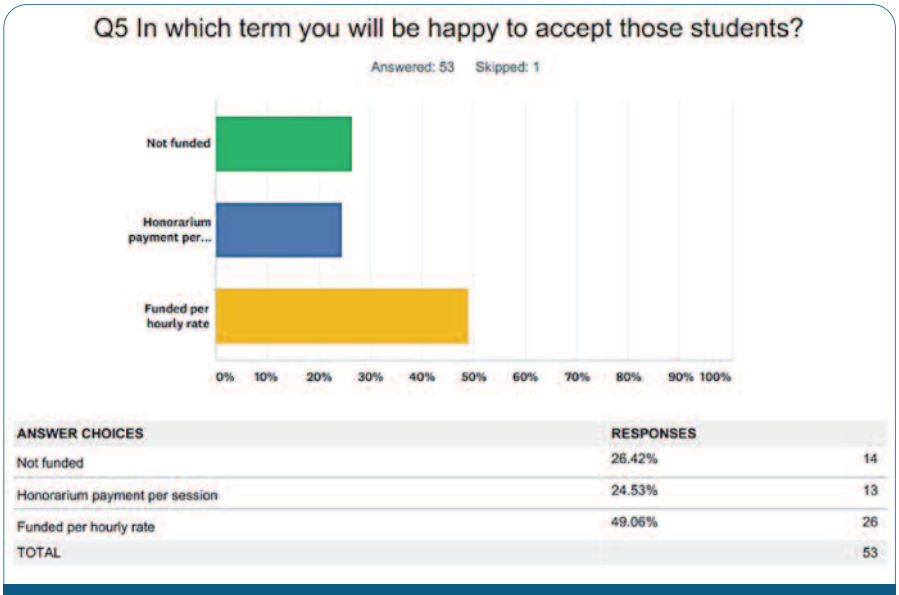
Advice provided to patients

Mixed responses were found on patient advice with employers' biggest confidence of 95.83% in General Sales List (GSL) goods advice followed by a 75% response to over-the-counter (OTC) counselling to patients. More specialised advice services like telephone advice, prescription medicine and medication reviews had lower confidence but depend on the students' level of progress within their MPharm degree.



ANSWER CHOICES	RESPONSES	
Strongly Agree	35.19%	19
Agree	51.85%	28
Disagree	11.11%	6
Strongly Disagree	1.85%	1
TOTAL		54

Figure 1: Employers' willingness to host undergraduate students during placements



ANSWER CHOICES	RESPONSES	
Not funded	26.42%	14
Honorarium payment per session	24.53%	13
Funded per hourly rate	49.06%	26
TOTAL		53

Figure 2: Employers preference for funding placements

Other clinical services provided in community pharmacy

Among clinical services responses, blood pressure check, lifestyle advice and safe handling of medicine waste were the highest, but all other clinical services routinely undertaken were considered as suitable with the lowest being cholesterol checking (39.58%) and controlled drugs disposal entries (41.67%).

While profession-specific training is essential, application of this training in interdisciplinary simulation training, provides a valuable level of peer review (medical, nursing, assistant physicians and pharmacy) and assessment of competencies by trainers from other professions. However, interdisciplinary activities are underdeveloped and underutilised, partly because in practice they pose major timetabling issues for institutions. Students are exposed to real-life scenarios during their pre-registration placement and the current shadowing placements do not prepare them, in knowledge or confidence, for this exposure. Additionally, regardless of whether they will be placed in community or in hospital, they will always have to communicate with other health care providers to gather or pass information.

If undergraduate practice-based placements are considered in the future and valued as a labour force, they must be designed based on the preferences of the largest employment sector for pharmacists, which is for community pharmacists. If this is to occur at undergraduate level, community pharmacy pre-registration placements will be regarded as a favourable clinical development pathway - not only hospital pharmacy placements.[18] Pharmacy practice training cannot be separated from service provision and has to be a fundamental part of the design and delivery of patient care following the same concept of nursing and medical education. It is recognised that an

institution that trains well delivers high quality care.

For this to happen, pharmacy students need to be aware of the changing role of the pharmacist within NHS and diversity of roles in community, hospital, general practice, management and specialist clinical roles.[19] Designing placements and objectives that fit into normal routines and work patterns are more likely to be accepted in the community. As workplace learning is considered as an essential part of the culture of quality training, the role of the facilitator and educational supervisor will require further development.

Moreover, it is crucial that pharmacy employers' value and develop infrastructure that encourages best and imaginative use of workplace-based learning methods, and a risk-free opportunity for students to develop the best possible clinical and professional skills and knowledge. Knowledge creation and the deployment of new knowledge in the workplace have given rise to the workplace itself being recognised as a site of learning and knowledge production.[20] If health education is to continue to make a contribution to the knowledge economy, collaborative activities based in and around the workplace should be considered.

Students will explore the changing employment patterns and how it has impacted on the demand for higher level skills, more flexibility, reflection and career planning. Graduate level skills and qualifications are seen as being increasingly important in the changing workplace.[21]

Table 2: Tasks suggested by community pharmacist

ANSWER CHOICES	RESPONSES	
Dispensary	59.18%	29
OTC	67.35%	33
Shelf Filling	89.80%	44
Stock and date check	89.80%	44
Prescription reception	81.63%	40
Prescription hand out	71.43%	35
Cash handling/Till service	67.35%	33
Fridge temp check	83.67%	41
Telephone answering	63.27%	31
Telephone queries	34.69%	17
Medication assembling	61.22%	30
Labelling	55.10%	27
Dispensing	46.94%	23
Other (please specify)	8.16%	4
Total Respondents: 49		

Table 3: Advice in community pharmacy

ANSWER CHOICES	RESPONSES	
Prescription queries patients	56.25%	27
Telephone advice	31.25%	15
Prescription queries/clinicians	33.33%	16
General sale list advice	95.83%	46
Prescription medicine advice	33.33%	16
Prescription only medicine advice	27.08%	13
Counselling OTC	75.00%	36
Medication review	12.50%	6
Other (please specify)	8.33%	4
Total Respondents: 48		

It is recognised that an institution that trains well also delivers high quality care. Like medicine, pharmacy training struggles with limited time to spend on educational activities during the taught course so it becomes even more important that training programs deliver real value for organisations.[22]

Who will benefit?

It is crucial that pharmacy employers value and develop infrastructure that encourages best and imaginative use of workplace based learning methods, and a risk-free opportunity for students to develop the best possible clinical and professional skills and knowledge.

Knowledge creation and the deployment of new knowledge in the workplace have given rise to the workplace itself being recognised as a site of learning and knowledge production.[23] If health education is to continue to make a contribution to the knowledge economy, collaborative activities based in and around the workplace should be considered.

This will help to uncover the hidden potential of students to navigate workload pressure, polarisation between groups and their own biases are crucial to learn in the workplace environment and workplace-based experiential courses present pharmacy educators with the logistical challenge of finding sufficient numbers of pharmacy practitioners to host MPharm students.[24] They also provide academic challenges because assessment of student performance extends beyond areas amenable to traditional assessment methods, such as multiple-choice question examination, to the assessment of higher cognitive functions including communication, critical-thinking, decision-making, problem-solving and lifelong learning skills.

Small group discussion and reflective writing are considered effective educational methods for assessing higher cognitive function in both formative and summative form. Accordingly, it is important to integrate practice-based learning with small group discussion and reflective writing in an iterative learning cycle.[25] They are particularly effective as educational methods when students are required to describe, analyse and answer questions about their own workplace-based activities.[26] A focus on students' workplace-based experiences promotes students' motivation to learn by enhancing the relevance of small group discussion and reflective writing. Kolb described reflective practice as cycle where clinical experience occur and trigger lifelong practice behaviour of reflection and ongoing self-evaluation.[25] The cycle continue through sharing the experience with others practitioners and reviewing its learning outcomes, reflect on how the experience made one feel, reflect on the actions and consequences and how they can be improved, and if it can be applied to other scenarios and then apply the learnt outcomes to new experience and repeat the cycle again.

". . . the community has accepted pharmacists as first-line professionals for routine medical problems, and not just suppliers of medication . . ."

Table 4: other clinical services in community pharmacy

ANSWER CHOICES	RESPONSES	
CD registry entry	54.17%	26
CD disposal entry	41.67%	20
Medication waste	79;17%	38
Smoking advice	47.92%	23
BP check	75.00%	36
Inhaler technique	56.25%	27
Weight management	58.33%	28
Diabetes check	41.67%	20
Cholesterol check	39.58%	19
Lifestyle advice	75.00%	36
Other (please specify)	2.08%	1
Total Respondents: 48		

Conclusion

Globally, pharmacists are trained within an educational framework that is built upon a foundation of a strong curriculum. There are identified gaps that are being addressed to enhance experiential learning but, to date, there is no solid framework universally applied as seen in undergraduate courses for other professions. In the UK particularly, where the community has accepted pharmacists as first-line professionals for routine medical problems, and not just suppliers of medication, this represents an enormous shift in roles. The NHS and Public Health England (PHE) strongly promote the multidisciplinary approach to patient care and considers vital the role of pharmacists at each level of patient care. There is a need of an introduction of compulsory experiential learning in the pharmacy undergraduate course to equip the modern pharmacy workforce for the future.

Declaration of interests

All authors declare no conflict of interest professionally or financially.

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